

IN THE CLAIMS

1. (Previously Presented) A remote communication device comprising:
communication circuitry configured to at least one of receive communication signals and generate communication signals; and
an antenna coupled with the communication circuitry, the antenna including a first portion, a second portion and an impedance reduction portion, the first portion to substantially tune the antenna to a first frequency band, the first and second portions to tune the antenna simultaneously to a second frequency band different from the first frequency band, the impedance reduction portion coupled to the first and second portions to facilitate tuning to the first and second frequency bands.
2. (Currently Amended) The remote communication device ~~according to~~ of claim 1, wherein the antenna comprises a microstrip antenna.
3. (Currently Amended) The remote communication device ~~according to~~ of claim 1, wherein the antenna is configured to electromagnetically communicate with a return loss of less than or equal to approximately -9 dB within the first and second frequency bands.
4. (Currently Amended) The remote communication device ~~according to~~ of claim 1, further comprising a power source coupled with the communication circuitry.
5. (Currently Amended) The remote communication device ~~according to~~ of claim 1, wherein the antenna is configured to output the wireless signals, and the remote communication device further comprises another antenna coupled with the communication circuitry and substantially tuned to first and second different frequency bands, the another antenna being configured to receive the wireless signals.
6. (Currently Amended) The remote communication device ~~according to~~ of claim 1, wherein the antenna is configured to communicate via backscatter modulation.

7. (Currently Amended) The remote communication device ~~according to~~ of claim 5, further comprising a quarter-wavelength transmission line coupled intermediate the communication circuitry and the antenna.
8. (Currently Amended) The remote communication device ~~according to~~ of claim 1, wherein the communication circuitry comprises radio frequency identification device circuitry.
9. (Currently Amended) The remote communication device ~~according to~~ of claim 1, wherein the frequency bands are centered at approximately 915 MHz and 2.45 GHz.
10. (Currently Amended) The remote communication device ~~according to~~ of claim 1, wherein the first and second portions of the antenna are substantially symmetric.
11. (Currently Amended) A remote communication device comprising:
communication circuitry configured to at least one of receive communication signals and generate communication signals; [[and]]
an antenna coupled with the communication circuitry, the antenna having a plurality of substantially resonant frequencies and an impedance reduction strip integrated within a frequency tuning portion of the antenna; and
a quarter-wavelength transmission line coupled intermediate the communication circuitry and the antenna.
12. (Currently Amended) The remote communication device ~~according to~~ of claim 11, wherein the antenna is substantially tuned to the resonant frequencies.
13. (Currently Amended) The remote communication device ~~according to~~ of claim 11, wherein the antenna is configured to electromagnetically communicate with a return loss of less than or equal to approximately -9 dB at the resonant frequencies.

14. (Currently Amended) The remote communication device ~~according to~~ of claim 11,
wherein the antenna is configured to output the wireless signals, and further comprising
another antenna coupled with the communication circuitry and configured to receive the
wireless signals at a plurality of substantially resonant frequencies.
15. (Currently Amended) The remote communication device ~~according to~~ of claim 14,
wherein the antenna is configured to communicate via backscatter modulation.
16. (Currently Amended) The remote communication device ~~according to~~ of claim 11,
wherein the antenna comprises a dipole antenna with a return loss of less than -9 dB at
the resonant frequencies.
17. (Currently Amended) The remote communication device ~~according to~~ of claim 11,
wherein the communication circuitry comprises radio frequency identification device
circuitry.
18. (Currently Amended) A radio frequency identification (RFID) device comprising:
communication circuitry configured to receive communication signals and generate
communication signals according to an identification code stored to identify the
~~radio frequency identification~~ RFID device; and
at least one antenna coupled with the communication circuitry, the at least one antenna to
simultaneously tune to a plurality of frequency bands including a first frequency
band and a second frequency band, wherein a center frequency of the second
frequency band is at least twice a center frequency of the first frequency band.
19. (Currently Amended) The ~~radio frequency identification~~ RFID device ~~according to~~ of
claim 18, wherein the antenna is configured to receive the wireless signals, and further
comprising another antenna coupled with the communication circuitry and substantially
tuned to a plurality of frequencies, the another antenna being configured to output the
wireless signals.

20. (Currently Amended) The ~~radio frequency identification~~ RFID device ~~according to~~ of claim 19₁ wherein the another antenna is configured to communicate via backscatter modulation.
21. (Currently Amended) The ~~radio frequency identification~~ RFID device ~~according to~~ of claim 18₁ wherein the antenna includes an impedance reduction conductor.
- 22-25. (Cancelled)
26. (Currently Amended) A radio frequency identification (RFID) device comprising:
communication circuitry configured to receive forward signals from an interrogator and generate return signals according to an identification code stored to identify an object to which the ~~radio frequency identification~~ RFID device is attached; and
an antenna coupled with the communication circuitry and configured to communicate wireless signals at one of a plurality of frequencies including at least one of receiving the forward signals and outputting the return signals; [[and]]
wherein the antenna is simultaneously substantially tuned to the frequencies, but not tuned to at least one frequency between two of the plurality of frequencies, at a moment in time.
27. (Currently Amended) The ~~radio frequency identification~~ RFID device ~~according to~~ of claim 26₁ wherein the antenna is configured to communicate at one frequency responsive to a frequency of communication of the interrogator.
28. (Currently Amended) The ~~radio frequency identification~~ RFID device ~~according to~~ of claim 26₁ wherein the antenna is configured to receive the forward signals, and further comprising another antenna coupled with the communication circuitry and configured to output the return signals at one of a plurality of frequencies.

29. (Currently Amended) The ~~radio-frequency identification~~ RFID device ~~according to~~ of claim 28₁ wherein the another antenna is configured to communicate via backscatter modulation.
30. (Currently Amended) The ~~radio-frequency identification~~ RFID device ~~according to~~ of claim 26₁ wherein the impedance reduction conductor tunes the antenna to one of the frequencies.
- 31-37. (Cancelled)
38. (Previously Presented) A wireless communication method comprising:
providing a remote communication device having an antenna simultaneously
substantially tuned to first and second different frequency bands; and
communicating wireless signals using the antenna, including at least one of:
receiving wireless signals at a frequency within one of the frequency bands, and
outputting wireless signals at a frequency within one of the frequency bands;
wherein the antenna is not tuned to at least one frequency between the first and the
second different frequency bands, and the antenna includes an impedance
reduction strip integrated within the antenna to facilitate tuning to the first and
second frequency bands.
39. (Currently Amended) The method ~~according to~~ of claim 38₁ wherein the providing
comprises providing a remote communication device having the antenna configured to
electromagnetically communicate with a return loss of less than or equal to
approximately -9 dB within the first and second frequency bands.
40. (Currently Amended) The method ~~according to~~ of claim 38₁ wherein the providing
comprises providing a remote communication device having a plurality of antennas
individually substantially tuned to first and second different frequency bands.

41. (Currently Amended) The method ~~according to~~ of claim 40₁, wherein the communicating comprises receiving using one of the antennas and outputting using another of the antennas.
42. (Currently Amended) The method ~~according to~~ of claim 38₁, further comprising processing wireless signals using the remote communication device.
43. (Currently Amended) The method ~~according to~~ of claim 38₁, wherein the providing comprises providing a radio frequency identification device.
- 44-49. (Cancelled)
50. (Currently Amended) A radio frequency identification (RFID) device communication method comprising:
affixing a ~~radio frequency identification~~ RFID device to an object to wirelessly identify the object via wireless signals at a plurality of frequencies using at least one antenna of the ~~radio frequency identification~~ RFID device, the at least one antenna being simultaneously substantially tuned to the frequencies but not tuned to at least one frequency between two of the plurality of frequencies;
receiving forward signals at one of the frequencies; and
outputting return signals at one of the frequencies.
51. (Currently Amended) The method ~~according to~~ of claim 50₁, wherein the providing comprises providing the ~~radio frequency identification~~ RFID device having the one antenna configured to output the return signals.
52. (Currently Amended) The method ~~according to~~ of claim 50₁, further comprising processing wireless signals using the ~~radio frequency identification~~ RFID device.

53. (Currently Amended) The method ~~according to~~ of claim 50, wherein the receiving and outputting occur at the same frequency.
- 54-56. (Cancelled)
57. (Currently Amended) A method of forming a radio frequency identification (RFID) device comprising:
providing communication circuitry configured to at least one of receive forward signals and output return signals;
forming at least one antenna to ~~[[allow]]~~ simultaneously communicate at a plurality of resonant frequencies, the at least one antenna not tuned to at least one frequency between two of the plurality of resonant frequencies; and
coupling the at least one antenna with the communication circuitry.
58. (Currently Amended) The method ~~according to~~ of claim 57, further comprising coupling a power source with the communication circuitry.
59. (Currently Amended) The method ~~according to~~ of claim 57, wherein the providing comprises providing ~~radio frequency identification~~ RFID device communication circuitry.
60. (Currently Amended) The method ~~according to~~ of claim 57, wherein the coupling comprises coupling a plurality of antennas with the communication circuitry, one of the antennas being configured to receive wireless signals corresponding to the forward signals and the other of the antennas being configured to communicate wireless signals corresponding to the return signals.
61. (Currently Amended) The method ~~according to~~ of claim 57, wherein the coupling comprises coupling the at least one antenna comprising a dipole antenna.

62-72. (Cancelled)

73. (Currently Amended) The remote communication device ~~according to~~ of claim 1, wherein the antenna is substantially tuned to the first and second different frequency bands having different respective carrier frequencies.

74. (Currently Amended) The remote communication device ~~according to~~ of claim 1, wherein the antenna is configured to communicate at different substantially resonant frequencies corresponding to signals generated using at least one interrogator and which have different carrier frequencies.

75. (Currently Amended) The ~~radio-frequency identification~~ RFID device ~~according to~~ of claim 18, wherein the plurality of frequencies correspond to different carrier frequencies of the communication signals.

76. (Cancelled)

77. (Currently Amended) The ~~radio-frequency identification~~ RFID device ~~according to~~ of claim 26, wherein the frequencies comprise carrier frequencies of the forward and return signals.

78-80. (Cancelled)

81. (Currently Amended) The remote communication device ~~according to~~ of claim 1, wherein the communication circuitry is configured to control reflection, by the antenna, of electromagnetic energy present at the remote communication device to implement backscatter communications.

82. (Currently Amended) The remote communication device ~~according to~~ of claim 4, wherein the power source comprises a battery.

83-87. (Cancelled)

88. (Currently Amended) The ~~radio frequency identification~~ RFID device ~~according to~~ of claim 18, wherein the at least one antenna comprises a first loop antenna and a second antenna.
89. (Currently Amended) The ~~radio frequency identification~~ RFID device ~~according to~~ of claim 88, wherein a first loop antenna is configured to receive radio frequency wireless signals and the second antenna is configured to transmit radio frequency wireless signals.
90. (Currently Amended) The method ~~according to~~ of claim 57, wherein the at least one antenna comprises a first antenna and a second antenna.
91. (Currently Amended) The method ~~according to~~ of claim 90, wherein the first antenna is a loop antenna.
92. (Currently Amended) A radio frequency identification (RFID) device, comprising:
a first loop antenna configured to operate at a first frequency;
a second antenna configured to operate at a second frequency which is at least twice the first frequency; and
a communication circuitry coupled to the first antenna and the second antenna, the communication circuitry comprising a transmitter and a receiver, the receiver configured to receive wireless radio frequency interrogation signals via one of the first antenna and the second antenna, and the transmitter configured to use one of the first antenna and the second antenna to modulate a radio continuous wave signal to provide, in response to the wireless signals, information that identifies the RFID device, wherein the continuous wave signal is provided by a separate device interrogating the RFID device.

93. (Previously Presented) The RFID device of claim 92, wherein the first antenna is configured to operate at a plurality of frequencies including the first frequency and the second frequency; and the second antenna is configured to operate at the plurality of frequencies including the first frequency and the second frequency.
94. (Previously Presented) The RFID device of claim 92, wherein the receiver is configured to use the first antenna to receive the wireless radio frequency interrogation signals; and the transmitter is configured to use the second antenna to modulate the continuous wave signal.
95. (Currently Amended) The RFID device of claim 92, wherein the RFID device is configured to communicate the information that identifies the ~~radio frequency identification~~ RFID device without utilizing magnetic field effect.
96. (Previously Presented) The RFID device of claim 92, wherein the transmitter is configured to communicate with the separate device in one of a first communication mode and a second communication mode determined by the separate device, wherein in accordance with the first communication mode the RFID device modulates a radio frequency (RF) field generated by the RFID device and in accordance with the second communication mode the RFID device modulates an RF field generated by the separate device.
97. (Previously Presented) The RFID device of claim 92, wherein the transmitter is configured to transmit at a bit rate specified by the separate device.
98. (Previously Presented) The RFID device of claim 92, wherein the communication circuitry is configured to transition from a sleep state in response to a wake up command from the separate device.

99. (Previously Presented) The RFID device of claim 92, wherein the communication circuitry is configured to generate a random number to identify the RFID device.
100. (Currently Amended) The RFID device of claim 92, wherein the communication circuitry comprises an integrated circuit; and the first and second antennas are coupled to the integrated circuit.
101. (Currently Amended) The RFID device of claim 92, wherein the communication circuitry is configured to use the first loop antenna for a first communication range and to use the second antenna for a second communication range larger than the first communication range.
102. (Currently Amended) The RFID device of claim 92, wherein the first antenna is configured to operate in a first frequency band, and the second antenna is configured to operate in a second frequency band; wherein the first frequency band and the second frequency band are exclusive non-overlapping.
103. (Previously Presented) A radio frequency identification (RFID) device, comprising:
a first antenna and a second antenna configured to operate in a plurality of exclusive non-overlapping frequency bands; and
a communication circuitry coupled to the first antenna and the second antenna to receive and process radio frequency (RF) communication signals, the communication circuitry configured to receive the communication signals via one of the first antenna and the second antenna and, in response, to transmit identification signals via one of the first antenna and the second antenna, the identification signals to identify the RFID device via modulating an RF field generated by an interrogating device.

104. (Previously Presented) The RFID device of claim 103, wherein a central frequency of a first frequency band of the frequency bands is at least twice a central frequency of a second frequency band of the frequency bands.
105. (Previously Presented) The RFID device of claim 103, wherein the first antenna is configured to transmit signals in the first band; and the second antenna comprises a loop antenna configured to receive signals in the second band.
106. (Previously Presented) The RFID device of claim 105, wherein the communication circuitry is configured to use the first antenna to modulate a continuous wave signal in the RF field to transmit the identification signals.
107. (Previously Presented) The RFID device of claim 105, wherein the identification signals are transmitted without utilizing magnetic field effect.
108. (Previously Presented) The RFID device of claim 103, wherein the communication circuitry is configured to communicate with the interrogating device in one of an active mode and a passive mode, wherein in the active mode the RFID device modulates an RF field generated by the RFID device and in the passive mode the RFID device modulates an RF field generated by the interrogating device.
109. (Previously Presented) The RFID device of claim 103, wherein the communication circuitry is configured to transmit the identification signals at a bit rate specified by the interrogating device.
110. (Previously Presented) A radio frequency identification (RFID) method, comprising:
providing an RFID device having a first loop antenna and a second antenna configured to operate in a plurality of exclusive non-overlapping frequency bands;
receiving, from an interrogating device, an interrogation signal via one of the first antenna and the second antenna; and

- transmitting, in response to the interrogation signal, an identification signal to identify the RFID device to the interrogating device via one of the first antenna and the second antenna, wherein the identification signal is generated by modulating an RF field provided by the interrogating device.
111. (Previously Presented) The method of claim 110, wherein the interrogation signal and the identification signal have a same carrier frequency.
112. (Previously Presented) The method of claim 110, further comprising:
switching between an active mode and a passive mode, wherein in the active mode the RFID device modulates an RF field generated by the RFID device and in the passive mode the RFID device modulates the RF field provided by the interrogating device.
113. (Previously Presented) The method of claim 112, wherein the RFID device is configured to communicate the identification signal at a bit rate specified by the interrogating device.
114. (Previously Presented) The method of claim 113, further comprising:
~~transition~~ transitioning the RFID device from a sleep state in response to a wake up command from the interrogating device.
115. (Previously Presented) The method of claim 110, further comprising:
generating a random number to identify the RFID device, wherein the identification signal includes the random number.
116. (Currently Amended) A method ~~[[to]]~~ of forming a radio frequency identification (RFID) device, the method comprising:
providing communication circuitry configured to receive interrogation signals and output identification signals; ~~[[and]]~~
forming a first loop antenna and a second antenna; and

coupling the first loop antenna and the second antenna to the communication circuitry to allow the communication circuitry to use the first loop antenna and the second antenna to communicate wireless signals, including the interrogation signals and the identification signals, in a plurality of exclusive non-overlapping frequency bands.

117. (Previously Presented) The method of claim 116, wherein the communication circuitry is configured to switch between an active mode of signal transmission and a passive mode of signal transmission.
118. (Previously Presented) The method of claim 116, wherein the communication circuitry is configured to communicate the identification signals at a bit rate specified by an interrogating device.
119. (Previously Presented) The method of claim 118, wherein the communication circuitry is configured to transition from a sleep state in response to a wake up command from the interrogating device.
120. (Previously Presented) The method of claim 116, wherein the communication circuitry is configured to generate a random number to identify the RFID device.
121. (Previously Presented) A radio frequency identification (RFID) system, comprising:
a first RFID device to transmit wireless interrogation signals;
a second RFID device having a communication circuitry, a first loop antenna and a second antenna configured to operate at a plurality of frequencies, a first frequency of the frequencies being at least twice a second frequency of the frequencies, wherein in response to the interrogation signals, the second RFID device is to use one of the first loop antenna and the second antenna to provide identification signals, via modulating a radio frequency (RF) field provided by the

first RFID device, the identification signals identifying the second RFID device to the first RFID device.

122. (Previously Presented) The system of claim 121, wherein the second RFID device comprises a transmitter configured communicate with the first RFID device in one of a first communication mode and a second communication mode determined by the first RFID device, wherein in accordance with the first communication mode the transmitter modulates an RF field generated by the second RFID device and in accordance with the second communication mode the transmitter modulates an RF field generated by the first RFID device.
123. (Previously Presented) The system of claim 122, wherein the transmitter is configured to transmit at a bit rate specified by the first RFID device.
124. (Previously Presented) The system of claim 121, wherein the communication circuitry is configured to transition from a sleep state in response to a wake up command from the first RFID device.
125. (Previously Presented) The system of claim 121, wherein the communication circuitry of the second RFID device is configured to use the first loop antenna to receive the interrogation signals and use the second antenna to transmit the identification signals.
126. (Previously Presented) The system of claim 121, wherein the interrogation signals and the identification signals have a same carrier frequency.
127. (Previously Presented) The system of claim 121, wherein the identification signals include a random number generated by the second RFID device to identify the second RFID device.